**Cost/Benefit Analysis[[1]](#footnote-1)**

**Evaluating Quantitatively Whether to Follow a Course of Action**

You may have been intensely creative in generating solutions to a problem, and rigorous in your selection of the best one available. This solution may still not be worth implementing, as you may invest a lot of time and money in solving a problem that is not worthy of this effort.

Cost Benefit Analysis or cba is a relatively simple and widely used technique for deciding whether to make a change. As its name suggests, to use the technique simply add up the value of the benefits of a course of action, and subtract the costs associated with it.

Costs are either one-off, or may be ongoing. Benefits are most often received over time. We build this effect of time into our analysis by calculating a payback period. This is the time it takes for the benefits of a change to repay its costs. Many companies look for payback over a specified period of time – e.g. three years.

In its simple form, cost-benefit analysis is carried out using only financial costs and financial benefits. For example, a simple cost/benefit analysis of a road scheme would measure the cost of building the road, and subtract this from the economic benefit of improving transport links. It would not measure either the cost of environmental damage or the benefit of quicker and easier travel to work.

A more sophisticated approach to cost/benefit measurement models is to try to put a financial value on intangible costs and benefits. This can be highly subjective – is, for example, a historic water meadow worth $25,000, or is it worth $500,000 because if its environmental importance? What is the value of stress-free travel to work in the morning? These are all questions that people have to answer, and answers that people have to defend.

The version of cost/benefit analysis we explain here is necessarily simple. Where large sums of money are involved (for example, in financial market transactions), project evaluation can become an extremely complex and sophisticated art.

**Example**

A sales director is deciding whether to implement a new computer-based contact management and sales processing system. His department has only a few computers, and his salespeople are not computer literate. He is aware that computerized sales forces are able to contact more customers and give a higher quality of reliability and service to those customers. They are more able to meet commitments, and can work more efficiently with fulfillment and delivery staff. His financial cost/benefit analysis is shown below:

***Costs:***  
New computer equipment:

* 10 network-ready PCs with supporting software @ $2,450 each
* 1 server @ $3,500
* 3 printers @ $1,200 each
* Cabling & Installation @ $4,600
* Sales Support Software @ $15,000

Training costs:

* Computer introduction – 8 people @ $400 each
* Keyboard skills – 8 people @ $400 each
* Sales Support System – 12 people @ $700 each

Other costs:

* Lost time: 40 man days @ $200 / day
* Lost sales through disruption: estimate: $20,000
* Lost sales through inefficiency during first months: estimate: $20,000

*Total cost: $114,000*

***Benefits:***

* Tripling of mail shot capacity: estimate: $40,000 / year
* Ability to sustain telesales campaigns: estimate: $20,000 / year
* Improved efficiency and reliability of follow-up: estimate: $50,000 / year
* Improved customer service and retention: estimate: $30,000 / year
* Improved accuracy of customer information: estimate: $10,000 / year
* More ability to manage sales effort: $30,000 / year

*Total Benefit: $180,000/year*

*Payback time: $114,000 / $180,000 = 0.63 of a year = approx. 8 months*

**Tip:**  
The payback time is often known as the break-even point. Sometimes this is more important than the overall benefit a project can deliver, for example because the organization has had to borrow to fund a new piece of machinery. The break-even point can be found graphically by plotting costs and income on a graph of output quantity against $. Break even occurs at the point the two lines cross.

Inevitably the estimates of the benefit given by the new system are quite subjective. Despite this, the Sales Director is very likely to introduce it, given the short payback time.

http://www.mindtools.com/images/box/top460grey.png**Key Points**

Cost/Benefit Analysis is a powerful, widely used and relatively easy tool for deciding whether to make a change. To use the tool, first work out how much the change will cost to make. Then calculate the benefit you will receive from it. Where costs or benefits are paid or received over time, work out the time it will take for the benefits to repay the costs.

Cost/Benefit Analysis can be carried out using only financial costs and financial benefits. You may, however, decide to include intangible items within the analysis. As you must estimate a value for these, this inevitably brings an element of subjectivity into the process.

1. Retrieved from [www.mindtools.com](http://www.mindtools.com), June 1, 2012 [↑](#footnote-ref-1)